

# HTSD10X

10X Pan-Tilt Speed Dome Camera



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## WARNING & CAUTION

If you fail to read this information and handle the product incorrectly, serious injury may occur.

Never install the product in area exposed to oil or gas.

Never install the product on a ceiling that cannot hold its weight.

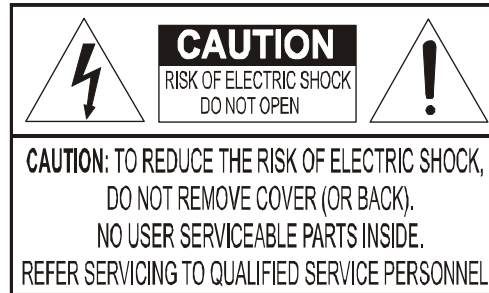
Never touch the power cord with wet hands.

Clean only with a dry cloth.

Never install the product in extreme high or low temperature.

Never drop hit strongly or vibrate the product.

Never touch the front glass of the product.



This symbol is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### Warning

**Never move Pan/Tilt by hand.** It may causes serious damage to the camera.

### What's in the Box ?

1. Camera
2. Screws ( Ø4x16 screw 5EA )
3. Terminal block (5pin 2EA)
4. Manual
5. Screw Cap (2 EA)

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## GENERAL FEATURES

### **100X Zoom Mini Speed Dome**

10X Optical Zoom with 10X digital zoom

### **±0.02° dome system accuracy**

With 0.1° technical accuracy, camera provides excellent sensitive and delicate controlling on preset mode by adapting 1/4 micro step and twin gear system

### **360° Endless Rotation**

10X mini speed dome is capable of endless rotation of 360 degrees

### **Compensation function: preset position**

The function minimizes the appearance of shaky images caused by low-frequency vibration, wind and any impact and maintains a normal horizontal resolution and sets the starting point of pan/tilt on preset mode by using joystick turning one time without turn off the power of the camera. It is useful for outdoor surveillance and traffic monitoring applications.

### **Over 200°/Sec Preset Speed**

The 360° full pan function moves through a maximum of 200°/sec., enabling you to quickly pinpoint the spot you want to watch. Tilt speed provides through a maximum 200°/sec on preset.

### **Polarity Protection of Power (DC12V)**

### **Filter changeable - True Day/Night**

Surveillance with optimum picture is possible owing to filter changeable Day/Night (ICR block filter) function and DSS.

Indoor / Outdoor applications

### **Quick Operation Keys**

This camera provides quick functional keys in order to be easily controlled by any controller or DVR.

### **Various Surveillance Functions**

**Auto Scan** repeats pan and tilt between two preset positions with different speed and dwell time.

**8 Group Tour** up to 8 Programmable Group tours available and each group consists up to 60 presets with different speed and dwell time with 16 characters.

**164 Preset positions** up to 164 programmable preset positions are available with 16 characters

**8 Patterns** up to 8 programmable user-defined patterns are available with 16 characters and each one is consisting 50 seconds, total 400 seconds.

**8 Sectors** up to 8 programmable user-defined sectors are available with 16 characters

**4 Privacy Masking Zones** up to 4 programmable user-defined privacy masking zones are available with 16 characters

**4 Alarm input** up to 4 alarms activate with preset, tours, patterns.

### **200°/S – Manual speed**

This camera provides up to 200°/sec of manual speed and it's adjustable from 10°/sec to 200°/sec by each 10°/sec

### **1/4" Sony Super HAD CCD**

Equipped with Sony Super HAD CCD technology, these cameras provide excellent sensitivity and low smear levels.

### **Intelligent Pan/Tilt Controlling**

Intelligent Pan/Tilt function continually decreases pan and tilt speeds in proportion to zoom.

### **Aluminum case and PC cover**

Aluminum body and Poly Carbonated dome cover (IP66 Rated)

### **Password Protection**

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## NAMES OF EACH PART

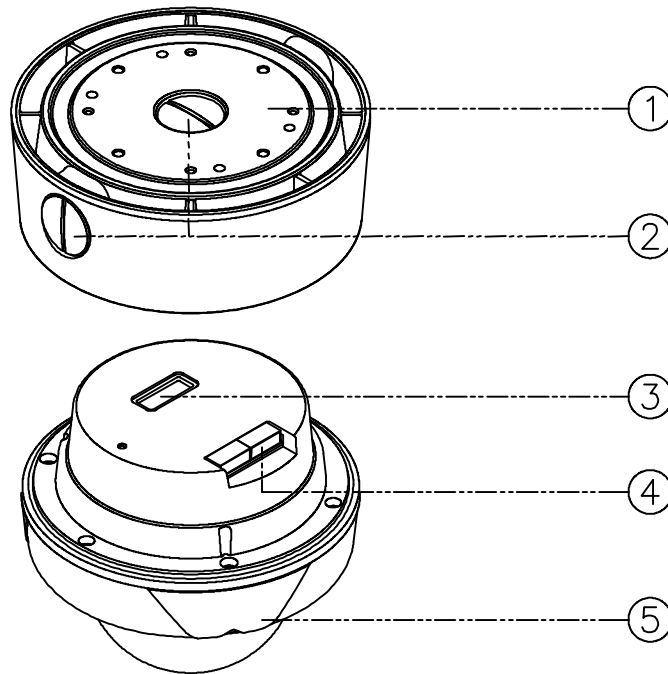


FIG.1

1. Surface Mount Adaptor
2. Cap Screw ( PT3/4 , 2EA )
3. Dip Switch
4. Terminal Block
5. Main body

---

# INSTALLATION

## A. CONNECTION METHOD

### A-1

1. Loosen the screws on the domes cover and remove it from the base.  
(Screws will not come out)
2. Loosen the screws which connect the mount cover and Main base and separate the dome cover from the main base. (Screws will not come out)
3. Connect power (**12 VDC 1.5 A**) to Power and GND.
4. Connect video to Video and GND.
5. Connect communication cable to RS-485 connectors.
6. Connect alarm cable to GND like 1 and GND, 2 and GND, 3 and GND, 4 and GND.  
(You can use both N.O / N.C methods.)

- **Don't screw too tightly. It can be the cause of defect.**

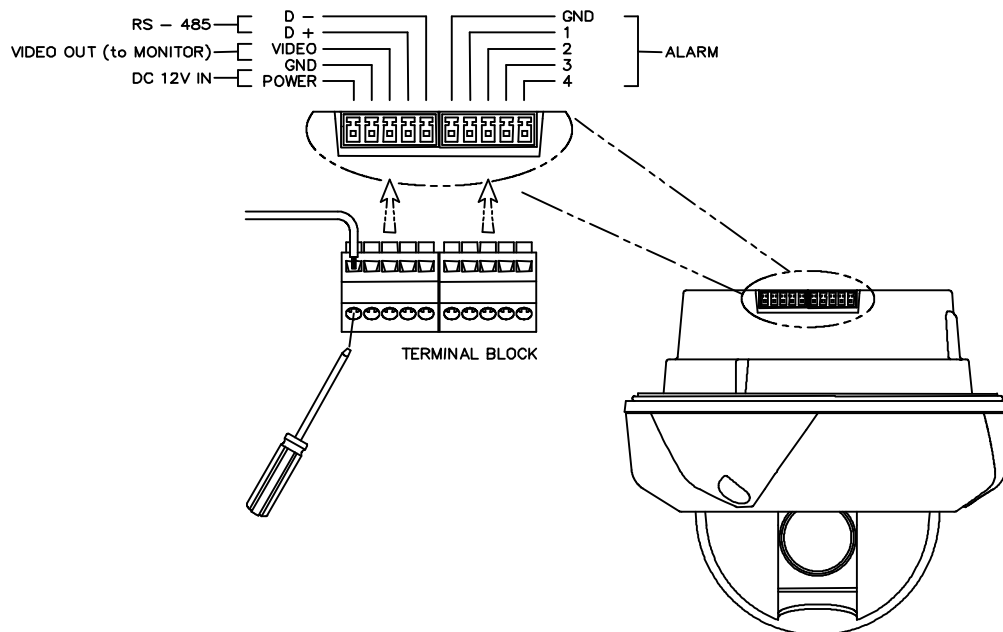


FIG.3

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# INSTALLATION

## B. MOUNT

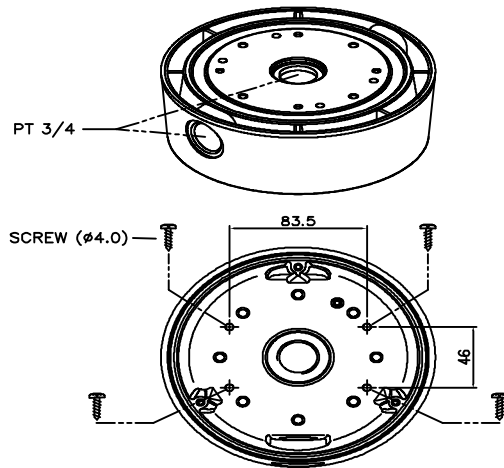


FIG. 4

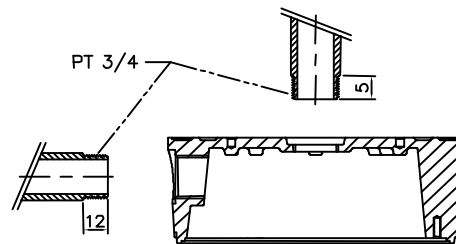


FIG. 5

1. Attach the surface mount adaptor with 4 screws at the installation site. (FIG.4)
2. When you use pipe, please note the standard size of pipe. (FIG.5)
3. Re-assemble the domes.

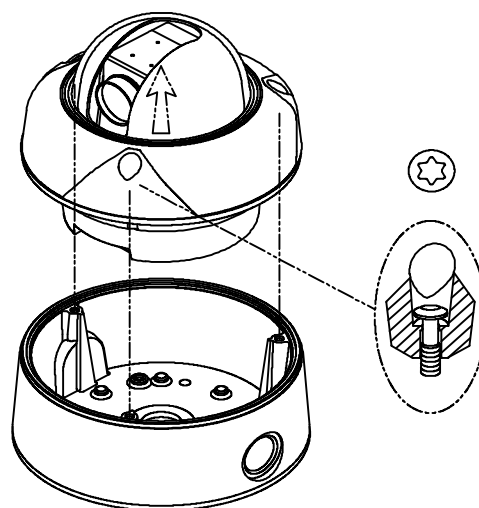


FIG. 2

## QUICK OPERATING KEYS

1-64 + preset and 101~200 + preset are used for preset and 65-100 + preset used for functions.  
 For example, to enter OSD MENU, press the button **95** + **PRESET**.

**<Quick Operation Key Table 1, Pelco - D, P>**

Number	Note	Function
1 ~ 64, 100~200 +Preset	PRESET	Executing Preset 1 ~ 64
65 + Preset	PRESET STATUS	Display Preset Status
66 +Preset	AUTO SCAN	Executing Auto Scan
67 +Preset	AUTO FLIP	Selectable On/Off/Auto in Auto Flip function
71~78 +Preset	GROUP TOUR	Executing Group Tour #1 ~ #8
81~88 +Preset	PATTERN	Executing Pattern #1 ~ #8
91 + Preset	ZERO POSITION	
92 + Preset	FREEZE	
93 + Preset	BLC MODE	Selectable On/Off in BLC function
94 + Preset	D/N MODE	Selectable Day/Night Mode (Auto/Day/Night Mode)
95 + Preset	OSD MAIN MENU	To enter OSD Main Menu
96 + Preset	FOCUS ADJUST	Focus adjusting
97 +Preset	ALARM	Selectable Enable/Disable all Alarms

**<Quick Operation Keys Table 2> Use these function keys if controller has these keys>**

Menu	Function
Tilt Up / Down	Sub menu cursor moves up / down
Pan Left / Right	Enter to the sub menu or status change or decrement
Focus Near	Using for Enter key when user select YES or NO
Focus Far	Using for function changing keys when set coordinate
Zoom Tele	Status cursor to the right
Zoom Wide	Status cursor to the left

\* **65 + preset** : Status Report , If user presses any key, it disappears.



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## QUICK OPERATING KEYS

### DIAGNOSTIC

When the Power is turned on a DIAGONOSTIC is operated.

The following messages are displayed on the monitor.

```
CAMERA ID : 001  
BAUD RATE : 2400 BPS  
  
WAITING.....
```

```
PAN ORIGIN          CHECK OK  
TILT ORIGIN         CHECK OK  
TX CONNECTION       TEST OK  
CAMERA COMM         TEST OK
```

**A.** Pan Origin Test

Zero point of Pan is founded after Panning test.

**B.** Tilt Origin Test

Zero point of Tilt is founded after Tilting test.

**C.** TX connection Test

Countdown from 60 seconds for TX Connection Test,

During the 60 seconds the camera must receive a signal from any keys of controller or DVR.

When received the correct signal, OK is displayed after TX CONNECTION TEST.

\* If %Not Tested+is displayed on the monitor,

- Camera did not receive the any signal.

- Camera did receive the signal but it was not correct.

- User should check protocol, baud rate and RS-485 connection.

**D.** Camera Comm. Test

Communication test with the camera is automatically checked.

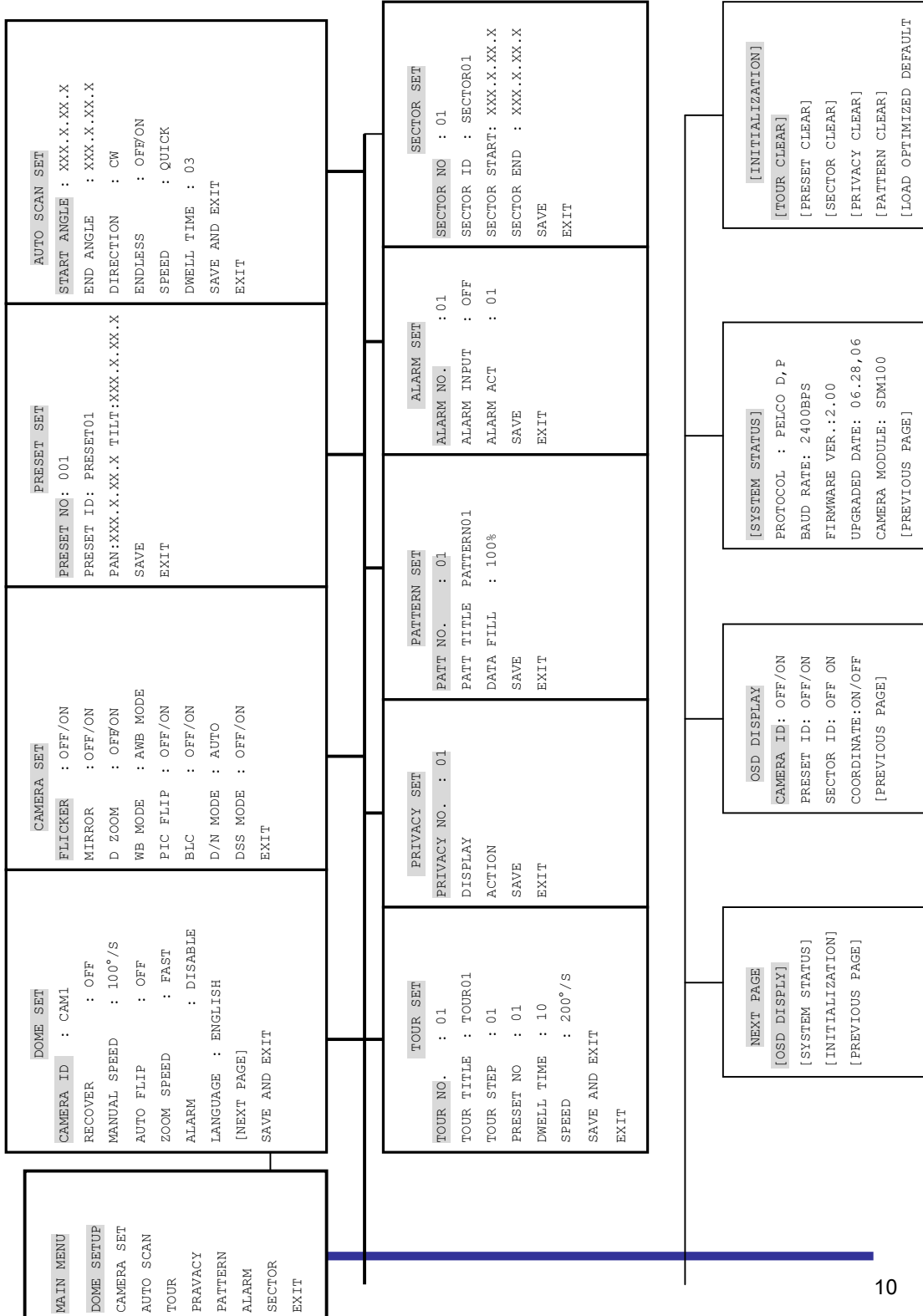
OK should be displayed in these four tests before installation.

# OSD MENU SETTING

"K" is displayed and the camera is

ready to operate.

## A. OSD MENU TABLE

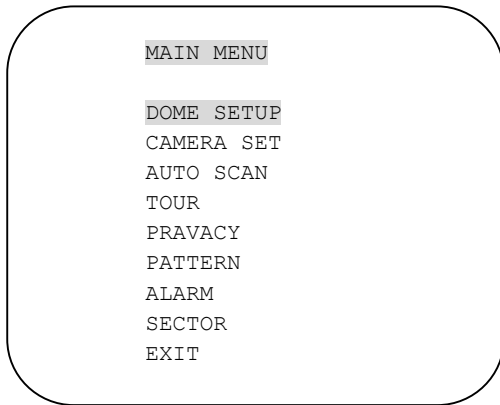


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## OSD MENU SETTING

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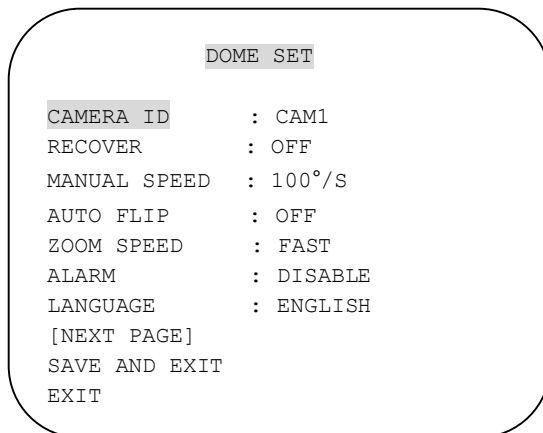
To enter the OSD Menu, press the button **95** + **PRESET**.



**\* Use the joystick “up - down” to move the position and “left - right” to make selection**

### B. Dome Setup

To enter the Dome setup, move the joystick right to move the cursor.



← **DEFAULT SETTING**

#### B-1. DOME SET - CAMERA ID

To set camera ID, select up to 16 characters using Joystick left or right.

Press **ZOOM TELE** button to move to the next character from left to right direction and

**ZOOM WIDE** button to move to the next character from right to left direction

(Space displays when  appears)

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## OSD MENU SETTING

### B-2. DOME SET - RECOVER

This feature allows the dome to work from the last setting before you use the dome manually (Auto scan, group tour, pattern or sectors) , after the set time, even power shut down and it turns on again. Recovery time can be programmed from 15 second to 90 seconds. The default setting is OFF.

### B-3. DOME SET - MANUAL SPEED

Manual Speed of Pan/Tilt is selectable from 10°/sec up to 200°/sec. The default setting is 100°/sec

### B-4. DOME SET - AUTO FLIP

Auto Flip is available and the default setting is OFF. Move joystick right or left+ to select ON or OFF. The default setting is OFF. This function can be recalled by pushing **67+ preset** button.

### B-5. DOME SET – ZOOM SPEED

Zoom speeds are selectable FAST or SLOW mode. Move joystick to the right direction for selecting FAST or SLOW. The default setting is FAST.

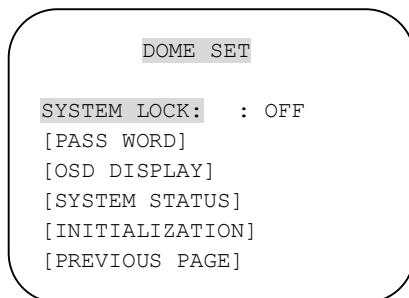
### B-6. DOME SET – ALARM

All alarms are available when set to the ENABLE Mode. Move joystick in the right or left direction to select ENABLE/DISABLE. The default setting is DISABLE. This function can be recalled by pushing **97 + preset** button.

### B-7. DOME SET - LANGUAGE

Multiple languages are selectable here. Move the joystick to the right or left direction to select a language. The default setting is ENGLISH.

### B-8. DOME SET – [NEXT PAGE]



#### B-8-1. DOME SET – [NEXT PAGE] – SYSTEM LOCK

Password protection maintains memorized data. It cannot be adjusted by anybody without the

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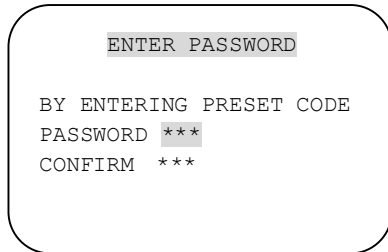
## OSD MENU SETTING

tem lock status is must set as ON.  
t setting is OFF.

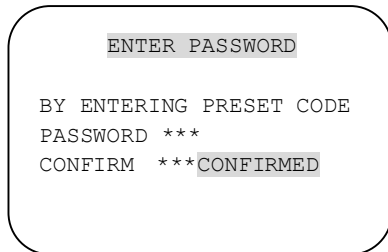
### B-8-2. DOME SET – [NEXT PAGE] – [PASSWORD]

To enter this page to set a password, move the joystick to the right direction. The password must be set by preset number from 001 to 255 (Default 99)

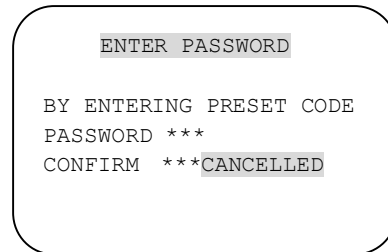
A. OSD MAIN MENU TABLE (PAGE 11) The default setting is BLANK.



Press any number from 001~255 with the preset button on password blank and again to confirm. Then %CONFIRMED+ is displayed on the monitor and the menu will go back to the previous page automatically.



<CONFIRMED>



<CANCELLED>

If the user presses the wrong preset number between PASSWORD and CONFIRM, %CANCELLED+ is displayed on the monitor and if user fails 3 times, the menu will return to the previous page automatically \* After setting a Password, an operator must press memorize password in order to enter OSD MAIN MENU, or to change the data which is memorized originally.

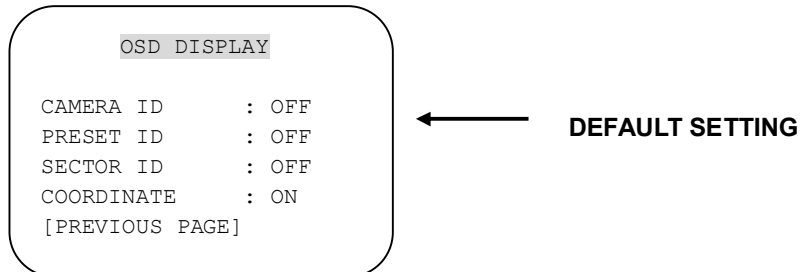
\* An operator must remember the password for the operation. Manufacturer doesn't provide a memorized password.

### B-8-3. DOME SET – [NEXT PAGE] – [OSD DISPLAY]

OSD ID is displayed if set ON here. Move the joystick to the right or left direction in order to select

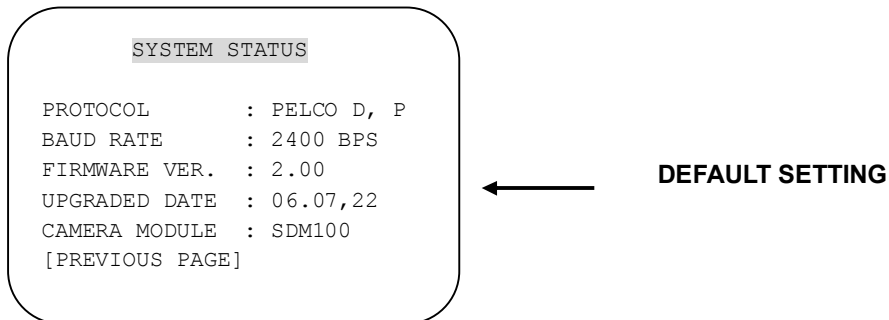
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## OSD MENU SETTING



### B-8-4. DOME SET – [NEXT PAGE] – [SYSTEM STATUS]

This page shows the information of this camera.



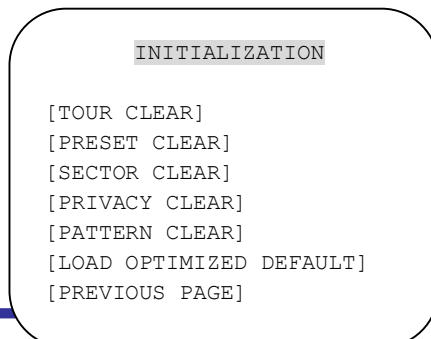
- Protocol and baud rate are shown according to the dip switch setting

(Refer to page 29, 30 and 31)

- Firmware version and upgraded date will be changed if upgraded.

### B-8-5. DOME SET – [NEXT PAGE] – [INITIALIZATION]

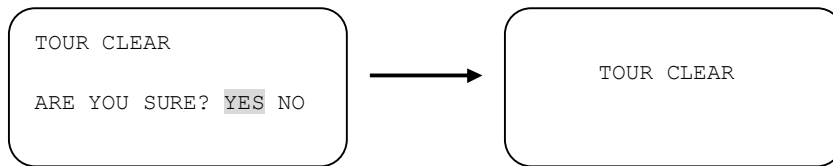
To clear all memorized data for tour, preset, sector, privacy or pattern, move joystick to the right direction when the cursor is on [INITIALIZATION]



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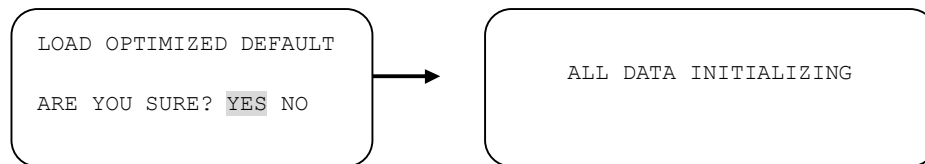
## OSD MENU SETTING

- To clear memorized data, move joystick to the right direction when cursor is on each item.



Press **FOCUS NEAR** button when the cursor is at YES in order to clear memorized data. Then each item such as tour, preset, sector and so on is displayed on the monitor about 2~3 seconds. After this process, the menu is returned to the previous page.

\* [PRESET CLEAR], [SECTOR CLEAR], [PRIVACY CLEAR], [PATTERN CLEAR] are same as [TOUR CLEAR].



- To clear all data and return to factory defaults, move the joystick to the right when the cursor is at [LOAD OPTIMIZED DEFAULT] to enter the above page.
- Move the joystick to the right or left direction in order to select YES, press **FOCUS NEAR** button.
- Then %ALL DATA INITIALIZING+is displayed about 5~7 seconds and then the menu is returned to the previous page automatically.

### **B-9. DOME SET – [NEXT PAGE] – SAVE AND EXIT**

To save the memorized data and escape this page, move the joystick to the right when the cursor is at SAVE AND EXIT.

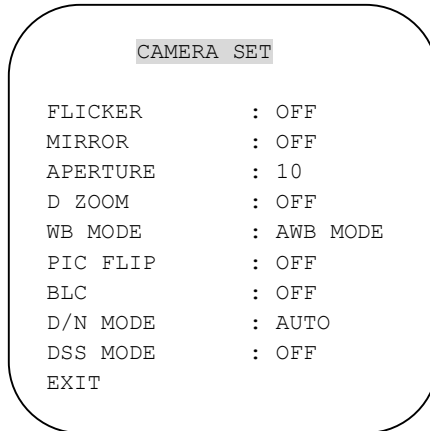
### **B-10. DOME SET – [NEXT PAGE] – EXIT**

In order not to save any data and escape this page, move the joystick to the right when the cursor is at EXIT

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## OSD MENU SETTING

### C. CAMERA SET



#### C-1. CAMERA SET - FLICKERLESS

Flickerless feature is selected between 50Hz and 60Hz. The default setting is OFF (NTSC: 60Hz / PAL: 50Hz). Set flicker mode ON when power source is in discord with frequency. The default setting is OFF

#### C-2. CAMERA SET - MIRROR

This feature creates a mirror image. The default setting is OFF.

#### C-3. CAMERA SET – APERTURE

Aperture enhances picture details and sharpness by increasing the gain of the camera and sharpening the edges in the picture. The default setting is 10. (the aperture level is from 00 ~ 15)

#### C-4. CAMERA SET – D ZOOM

Move the joystick to the right in order to set as ON. The default setting is OFF.

#### C-5. CAMERA SET – WB MODE

White balance functions have 4 modes according to the condition of the lighting. The default setting is AWB and it may change the mode option according to the lighting conditions as below.



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## OSD MENU SETTING

- Indoor . up to 3,200°K
- Outdoor . up to 5,800°K
- ATW Mode - 2,000°K to 10, 000°K

### **C-6. CAMERA SET – PIC FLIP**

Picture flip feature turns the picture upside down. Move the joystick to the right or left direction to select OFF/ON. The default setting is OFF.

### **C-7. CAMERA SET – BLC (Back Light Compensation)**

The default setting is OFF and BLC modes can be OFF/ON.

OFF . Backlight compensation is not activated.

ON . Back light compensation is activated.

This function can be recalled by pushing **[93 + preset]** button.

### **C-8. CAMERA SET – D/N MODE**

ICR filter is changeable according to the lighting, AUTO . NIGHT MODE . DAY MODE.

The default setting is AUTO MODE. This function can be recalled by pushing **[94 + preset]** button.

### **C-9. CAMERA SET – DSS MODE (DIGITAL SLOW SHUTTER)**

If DSS is turned on the digital slow shutter is working. The DSS will remain open to receive some more lighting.

The default setting is OFF.

### **C-10. CAMERA SET – EXIT**

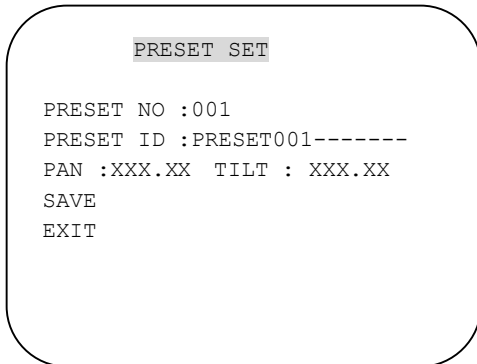
To escape this page, move the joystick to the right direction.

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## OSD MENU SETTING

### D. PRESET SET

To enter PRESET SET, move the joystick to the right direction.



← **DEFAULT SETTING**

#### D-1. PRESET – PRESET NO.

Up to 164 numbers of preset positions are available. Move joystick to the right or left direction to select a preset no.

#### D-2. PRESET – PRESET ID

To set preset ID, select up to 16 characters using Joystick to the left or right.

Press **ZOOM TELE** button moves to the next character from the left to the right direction and **ZOOM WIDE** button moves to the next character from the right to left direction

(Space displays when  appears)

#### D-3. PRESET – PAN: XXX.X TILT: XX.X

Press **FOCUS FAR** button in order to set the preset position, then use the joystick to move the camera to the position where the memorized preset no. is needed. Then press **FOCUS FAR** button again after setting a preset location.

#### D-4. PRESET – SAVE

Move the joystick to the right when the cursor is at SAVE and then the cursor will be located on the Preset ID for the continuous preset No. setting.

#### D-5. PRESET – EXIT

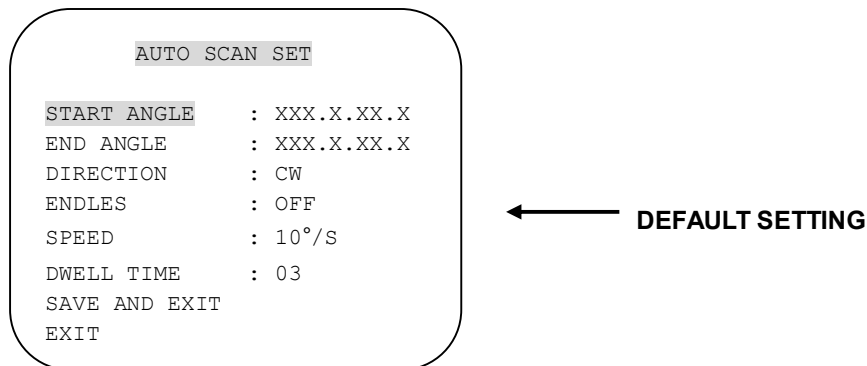
To escape this page, move joystick to the right .

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## OSD MENU SETTING

### E. AUTO SCAN SET

\* **[66 + preset]** button is working as AUTO SCAN after setting.



#### E-1. AUTO SCAN – START ANGLE

To set the start angle, press **[FOCUS FAR]** button then move the joystick to the starting angle which is to be memorized. Press **[FOCUS FAR]** button again is to escape.

#### E-2. AUTO SCAN – END ANGLE

To set end angle, press **[FOCUS FAR]** button then move the joystick to the starting angle which is to be memorized. Press **[FOCUS FAR]** button again is to escape.

#### E-3. AUTO SCAN – DIRECTION

Auto Scan directions are available with two direction as CW or CCW by joystick to the right or left direction

CW: Clock wise direction (Default)

CCW: Count Clock Wise Direction.

#### E-4. AUTO SCAN – ENDLESS

Auto Scan can use endless rotation, move joystick to the right direction in order to select ON. Otherwise, the default setting is OFF.

#### E-5. AUTO SCAN – SPEED

User can use auto scan speed from 01°/S up to 99°/S and the default setting is 10°/S.

#### E-6. AUTO SCAN – DWELL TIME

To select dwell time, move joystick to the left or right direction in order to adjust dwell time. It is possible to set from 01 second to 99 seconds and the default setting is 03 seconds.

#### E-7. AUTO SCAN – SAVE AND EXIT

To saving the memorized data and escape this page, move the joystick to the right when the cursor is at SAVE AND EXIT.

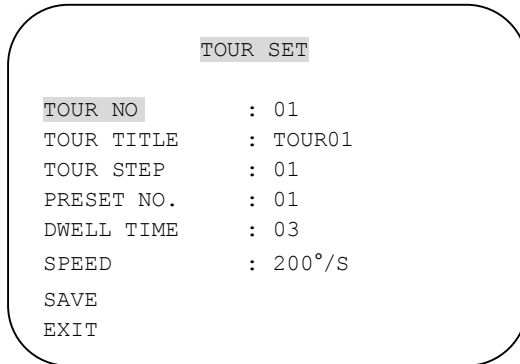
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## OSD MENU SETTING

the right .

### F. TOUR SET

8 Programmable tours can be set and each tour is available to set up to 64 preset steps. After setting the data to each tour group, 71~78 + preset buttons are working as group tour # 1~8



← DEFAULT SETTING

#### F-1. TOUR SET – TOUR NO.

Max. 8 group tour no. set by the joystick are available.

#### F-2. TOUR SET – TOUR TITLE

To set the tour title, select up to 16 characters using Joystick to left or right.

Press ZOOM TELE button to move the next character from the left to the right and ZOOM WIDE button to move the next character from the right to left direction (Space displays when □ appears)

The tour title is not displayed on the monitor, but only for the reference of user.

#### F-3. TOUR SET – TOUR STEP

Each tour group consists of up to 60 preset steps with different dwell time and speed. It is possible to match any preset # for each tour step.

#### F-4. TOUR SET – PRESET NO.

The chosen tour step #101 ~200. It is possible to select any preset no. up to 164.

#### F-5. TOUR SET 6 DWELL TIME

Dwell time can be up to 99 seconds from 01 second. The default setting is 03 seconds.

#### F-6. TOUR SET – SPEED

Each tour step can be set with different tour speed up to 200°/S and it is selectable from 10°/S.

Move joystick to the right or left to select the tour speed. The default setting is 200°/S.

#### F-7. TOUR SET – SAVE

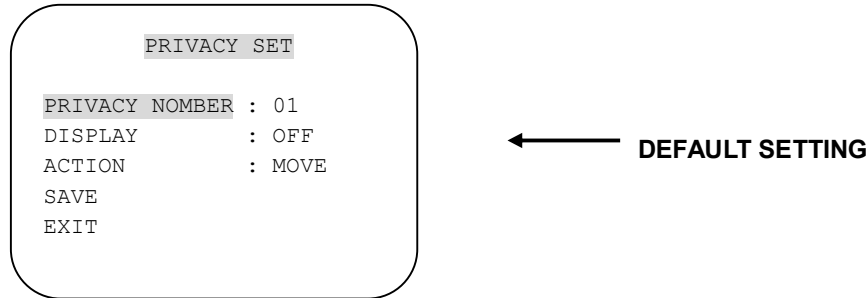
To save the memorized data and escape this page, move the joystick to the right when the cursor is at SAVE

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## OSD MENU SETTING jht

### G. PRIVACY SET

4 Privacy masking zones are available to block out areas of the scene.



#### G-1. PRIVACY SET – PRIVACY NUMBER.

Up to 4 privacy masking zones are available.

#### G-2. PRIVACY SET – DISPLAY.

Move joystick to the right or left direction to set ON in order to show the selectable block in the center of the monitor. This block appears as a translucent blue square when turned ON. The default setting is OFF.

#### G-3. PRIVACY SET – ACTION (MOVE / ADJUST)

To set the privacy area, press **FOCUS FAR** button when the MOVE MODE is showing. Then use the joystick to the user defined area in order to set the privacy zone. Then press **FOCUS FAR** button again to escape from MOVE MODE.

To adjust size of the privacy zone, move the joystick to the right or left direction when the cursor is on ACTION. After move mode changed to ADJUST MODE, press **FOCUS FAR** button in order to adjust the size of the privacy zone. The size of the privacy zone can be adjusted by using the joystick up down or left right,. After adjusting size of the privacy zone, press **FOCUS FAR** button to escape ADJUST mode.

- ADJUST: You can change the masking size by using the joystick to the left or right direction
- MOVE: You can move the privacy zone by using joystick to the left or right direction

#### G-4. PRIVACY SET – SAVE

After setting the privacy masking zone, to save the data, move the joystick to the right direction when the cursor is on SAVE. After saving the data, the cursor moves to PRIVACY NO.2 automatically to prepare the next privacy masking zone.

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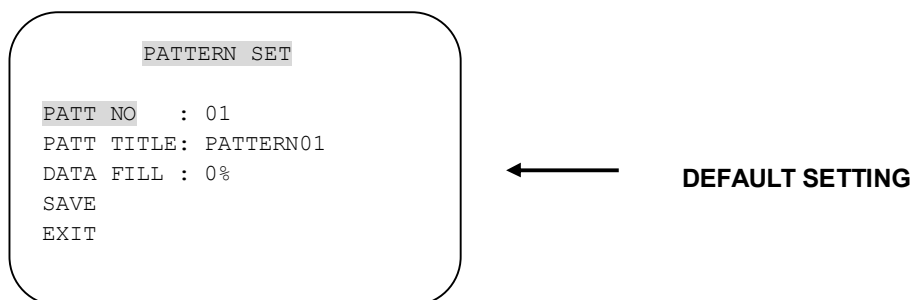
## G-5. PRIVACY SET –EXIT

# OSD MENU SETTING

## H. PATTERN SET

8 programmable patterns are available with 16 characters of title.

After setting the data to each pattern # 1~8, 81~88+ preset buttons are working as Pattern # 1~8.



### H-1. PATTERN SET –PATT NO.

Up to 8 programmable user-defined patterns set by the joystick are available.

### H-2. PATTERN SET –PATT TITLE

To set PATTERN TITLE, select up to 16 characters using Joystick to the left or right.

Press **ZOOM TELE** button moves to the next character from the left to the right direction and **ZOOM WIDE** button moves to the next character from the right to left direction (Space displays when  appears) Pattern title is not displayed on the monitor, but only for the reference of user.

### H-3. PATTERN SET –DATA FILL

To fill the programming data, press **FOCUS FAR** button in order to start the data fill up. Filling data is programmed according to the joystick movement. Press **FOCUS FAR** button again in order to escape.

### H-4. PATTERN SET –SAVE

To saving the memorized data, move the joystick to the right when the cursor is on SAVE. Then the cursor moves to the PATT NO.02 in order to prepare next pattern no.

### H-5. PATTERN SET –EXIT

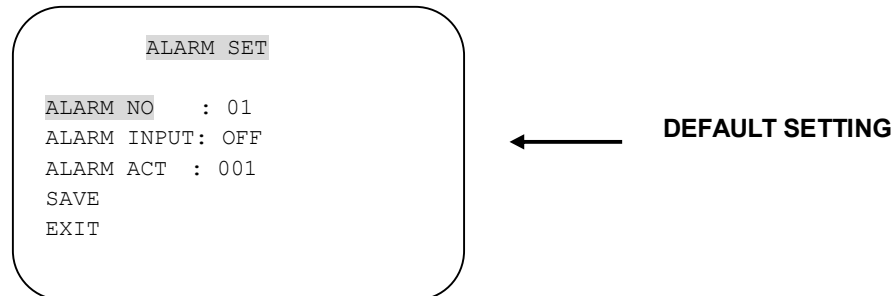
To escape this page, move joystick to the right

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## OSD MENU SETTING

### I. ALARM SET

4 Alarm inputs are available and each alarm can activate presets, group tours or patterns.



#### I-1. ALARM SET – ALARM NO.

Up to 4 alarms are selectable by using the joystick to the right when the cursor is on ALARM NO.

#### I-2. ALARM SET – ALARM INPUT

Input alarm provides two different ways - NC (Normal Close) or NO (Normal Close)

#### I-3. ALARM SET – ALARM ACT

Alarm activates various surveillance modes with Preset number up to 164, Group tour up to 8, Pattern up to 8. Move the joystick to the right or left direction to select any preset number, group tour no. or pattern no.

#### I-4. ALARM SET – SAVE

After setting the alarm input parameters, to save the data, move the joystick to the right when the cursor is on SAVE. After saving the data, the cursor moves to Alarm NO.2 automatically to prepare the next alarm.

#### I-5. ALARM SET –EXIT

To escape this page, move the joystick to the right

\* Before activating an Alarm, user must set ALARM ENABLE at DOME SET . ALARM . ENABLE  
(Refer to page 15)

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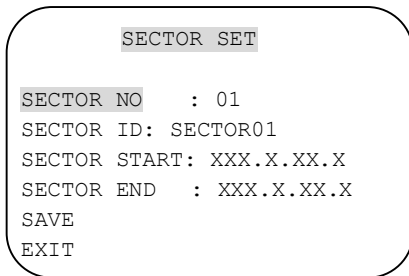
## OSD MENU SETTING

### J. SECTOR SET

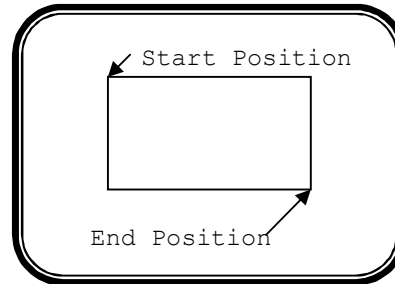
Up to 8 programmable sectors are available with 16 characters.

This feature is useful to memorize certain locations such as a parking zone, etc.

When a camera goes through this area, it shows the letter you memorized.



#### DEFAULT SETTING



#### J-1. SECTOR SET – SECTOR NO.

Up to 8 programmable sectors set by the joystick are available.

#### J-2. SECTOR SET – SECTOR ID

To set SECTOR ID, select up to 16 characters by using the Joystick to the left or right.

Press **ZOOM TELE** button to move to the next character from the left to the right direction and **ZOOM WIDE** button to move to the next character from the right to left direction (Space displays when  appears)

#### J-3. SECTOR SET – SECTOR START

To set SECTOR START angle, press **FOCUS FAR** button then move joystick to the left or right direction to set the position. To press **FOCUS FAR** button again is to escape.

#### J-4. SECTOR SET – SECTOR END

To set SECTOR END angle, press **FOCUS FAR** button then move joystick to the left or right direction to set the position. To press **FOCUS FAR** button again is to escape.

#### J-5. SECTOR SET – SAVE

After setting the SECTOR position, to save the data, move the joystick to the right when the cursor is on SAVE. After saving the data, the cursor moves to SECTOR NO.2 automatically to prepare the next SECTOR.

#### J-6. SECTOR SET –EXIT

To escape this page, move the joystick to the right



## K. EXIT

ie right or left direction then this

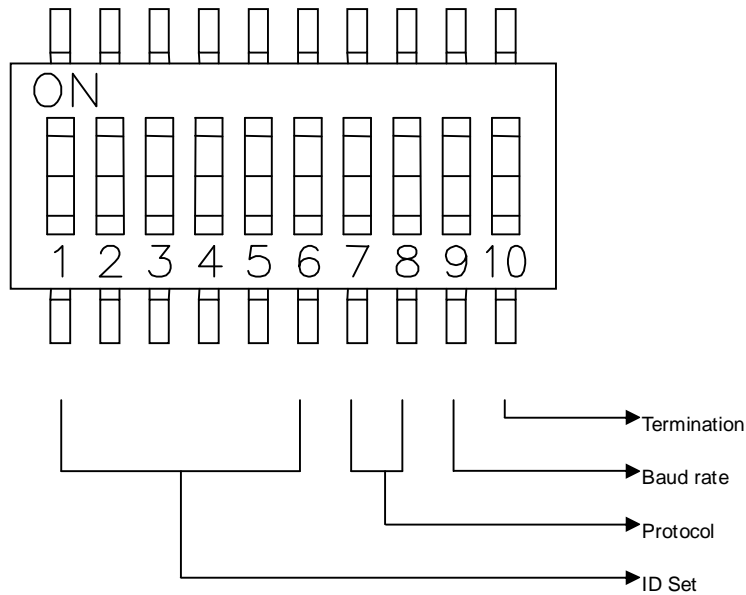
## DIP SWITCH SETTING

### A-1. DIP SW SETTING

This Speed Dome camera provides up to 63 camera IDs, adjustable using the 1<sup>st</sup>~6<sup>th</sup> Dip switch.

Open the camera case to set ID using DIP SW1.

\* Factory default: Camera ID = 1, PELCO-D



### A-2. ID SETTING (1-ON, 0-OFF) (1→10)

DIP SW	ID VALUE	DIP SW	ID VALUE	DIP SW	ID VALUE
10000XXXX	1	111010XXXX	23	101101XXXX	45
010000XXXX	2	000110XXXX	24	011101XXXX	46
110000XXXX	3	100110XXXX	25	111101XXXX	47
001000XXXX	4	010110XXXX	26	100011XXXX	48
101000XXXX	5	110110XXXX	27	100011XXXX	49
011000XXXX	6	001110XXXX	28	010011XXXX	50
111000XXXX	7	101110XXXX	29	110011XXXX	51
000100XXXX	8	011110XXXX	30	001011XXXX	52
100100XXXX	9	111110XXXX	31	101011XXXX	53
010100XXXX	10	000001XXXX	32	011011XXXX	54
110100XXXX	11	100001XXXX	33	111011XXXX	55
001100XXXX	12	010001XXXX	34	000111XXXX	56
101100XXXX	13	110001XXXX	35	100111XXXX	57
011100XXXX	14	001001XXXX	36	010111XXXX	58
111100XXXX	15	101001XXXX	37	110111XXXX	59
000010XXXX	16	011001XXXX	38	001111XXXX	60
100010XXXX	17	111001XXXX	39	101111XXXX	61
010010XXXX	18	000101XXXX	40	011111XXXX	62
110010XXXX	19	100101XXXX	41	111111XXXX	63
001010XXXX	20	010101XXXX	42		
101010XXXX	21	110101XXXX	43		
011010XXXX	22	001101XXXX	44		

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## DIP SWITCH SETTING

### A-3. PROTOCOL

7<sup>th</sup>-8<sup>th</sup> dip switches are used for Protocol Setting.

Factory Default: Pelco-D or Pelco-P ( Auto detection)

DIP SW1- 7	DIP SW1- 8	
OFF	OFF	Pelco-D or Pelco-P

### A-4. BAUD RATE SETTING

The 9<sup>th</sup> Dip Switch is used for BAUD RATE setting.

DIP SW can be changeable to 2400bps, 9600bps.

Factory Default: 2400bps.

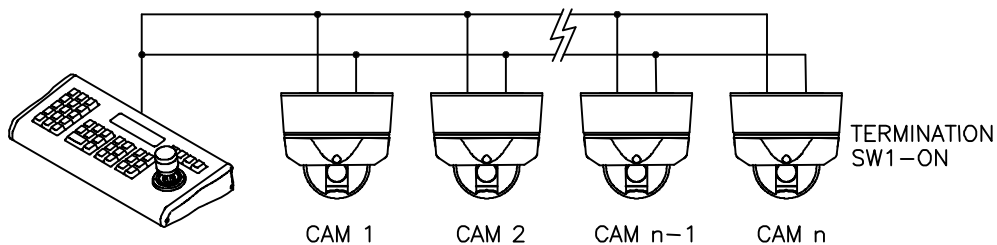
DIP SW1 9 <sup>th</sup>	BAUD RATE
OFF	2400
ON	9600

### A-5. 485 TERMINATIONS

10<sup>th</sup> Dip Switch is used for 100 $\Omega$  termination.

Set on 10<sup>th</sup> Dip Switch only for the last looped camera from the controller.

Even in case of only one camera, set on 10<sup>th</sup> Dip Switch of the cameras.



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## TROUBLE SHOOTING

If you have trouble operating in your camera, refer to the following.

PROBLEM	SOLUTION
Not operating	Check if the power supply is 12 VDC. Check if RS-485 communication cable is connected correctly. Check camera ID setting. Check the termination.
No picture	Check if all the cables are connected correctly. Check if the monitor is adjusted correctly. Check if video signal line is cut.
Dark screen	Adjust the monitor.
Abnormal camera Operation	Check if voltage level is out of the specification. Check the termination.
Screen not clear	Check if there is dust on the lens. Adjust the monitor. If excessive light is seen on a screen, change the camera angle or location. Adjust the lens focus again.

## SPECIFICATIONS

MODEL		HTSD10X	
PAN /TILT	Pan Rotation Angle	360_ Endless	
	Pan Speed	Manual	10_ ~ 200_/sec
		Preset	Max 200_/sec
	Tilt Rotation Angle	0_ ~ 90_	
	Tilt Speed	Manual	10_ ~ 200_/sec
Preset		Max 200_/sec	
System Accuracy		0.02_	
FUNCTIONS	Presets	164 positions with a 16-character label available for each position with different speed steps	
	Group Tour	Max. 8 Programmable group tours (each one consisting of up to 60 preset steps with different steps)	
	Auto scan	Programmable Auto scan	
	Pattern	8 Programmable Patterns (total 400 seconds)	
	Privacy Zone	4 privacy zones	
	Sector	8 selectable Sectors with 16 characters	
	Password Protection	Yes	
	Alarm Input	4 alarms OFF/NC/NO (with various programmable states)	
	Alarm Actions	Activate preset, Group scanning or Patterns	
	Auto Flip	ON / OFF	
	OSD Menu	Multiple Languages on screen	
	Communication	RS-485	
Protocol	Pelco D/P		
POWER	Power Consumption	9W Max	
	Power Supply	12VDC 750mA	
OTHERS	Construction	Die-cast , Anti-vandal dome cover	
	Dimensions	167.0 (D) * 167.0mm(H)	
	Weight	1.5 kg	
	Motor Type	Stepper Motor	
	Micro Steps	1/4 Step	
	Storage Temperature	-40F to +140F	
	Operating Temperature	-14F to +120F	
	Certifications	CE, FCC	
CAMERA MODULE	Image Sensor	1/4" Sony Super HAD CCD	
	Total Image Pixels	NTSC	811(H) * 508(V) 410K
		PAL	795(H) * 596(V) 470K
	Number Of Effective Pixels	NTSC	768(H) * 494(V) 380K
		PAL	752(H) * 582(V) 440K
	Horizontal resolution		More Than 500TV Lines
	Lens	Optical	10x Optical Zoom (F=3.8 to 38mm)
		Digital	10x (100x with optical)
	Day & Night (ICR)		Auto/ Day/ Night
	Min. Shooting Distance		0.35m(Wide)/0.8m(Tele)
	Digital Slow Shutter		2/4/8/16/24/32/64/128/ OFF
	Min. illumination	Normal mode	0.7Lux (50IRE)
		Night mode	0.02Lux (ICR On)
	Luminance S/N Ratio		More than 50dB
	Video Output		VBS:1.0Vp-p/75 Ohm
BLC		ON / OFF	

Flickerless

NTSC

ON / OFF (1/100)

ON / OFF (1/120)

AWB/ATW/INDOOR/ OUTDOOR

## DIMENSIONS

